

## **INFORMATION TECHNOLOGY (I T) STRATEGIC PLAN**

### **I. Introduction:**

Today more than ever, technology is ever present in the City of Williamsburg. Technology can be found in all City departments, enabling City staff to provide more services in a more timely and efficient manner to the people we serve, the citizens of Williamsburg and its employees.

The purpose of this plan is to guide technology uses and practices in the City of Williamsburg to better enable service delivery and business planning. This plan should not be viewed as an enabler of technology in the City, but as an enabler of business in the City with technology as a complementary force. Therefore, this plan should be at the core of operational planning at all levels of the City and in all departments.

This strategic plan is the result of meetings and discussions with all City department heads and City staff. It is a document representing goals and initiatives now and in the future. This plan is a 5 year plan and will be reviewed yearly to ensure its accuracy and validity.

In developing this plan, we have identified 8 functional areas of IT. This list is in no way a definitive list of all functional areas of IT. By its very nature, technology is ever changing and evolving, and therefore, so should this plan. This gives us an organized area to focus on to better plan for, align and coordinate technology driven business solutions now and in the future. The 8 functional areas of IT in the City of Williamsburg are as follows:

- A. e-Government – e-Government is the ability of a government entity to provide or deliver services electronically, specifically through the Internet. This includes the ability to pay taxes and fees, download forms, request services and so on. In defining this as its own functional area, this will allow us to better determine our strategy relative to e-Government in the City of Williamsburg.
- B. Geographic Information Systems (GIS) - GIS is the mechanisms, both hardware and software, used to deliver parcel and mapping information to be used by taxpayers, realtors, public safety personnel, and in the event of a catastrophe, Emergency Operations Personnel.
- C. Infrastructure/Security - This area will define our goals and the strategies that we employ to ensure that we maintain a network infrastructure capable of meeting our goal of delivering information to those that need it, whenever they need, and from wherever they need it. We also need to ensure that the networks we design and build are secure from outside hacking, as well as inside sabotage. There is nothing more important in Information Technology today than ensuring data and personal information security.
- D. Office Automation/Applications - As we have defined standards for hardware and software systems, we must also have standards on which applications are purchased or built. After all, if a goal is to eliminate stove pipes, then dissimilar systems must be able to integrate with each other. To do this, we

have determined common backend (database) software, as well as front end software. Ensuring this for the future will enable us to better integrate systems and improve processes.

- E. Hardware Management - The vision of the PC Lifecycle Management Program has already begun to pay dividends. Reduced calls due to a common PC platform enable IT staff to concentrate on improving other areas and processes. We expect to extend this to other areas of hardware, such as printers.
- F. Internet/Intranet Technologies - The popularity of our Intranet and Internet websites continues to increase. Providing citizens and businesses with the ability to view and pay accounts electronically continues to be a great focus of IT. With the advent of the Intranet, we are now extending these types of capabilities to employees, allowing staff in other departments (HR, Public Works) to concentrate on their core businesses. We will define an overall strategy for this and continue what we have started, all with a common vision of leading the way for others to follow.
- G. Voice Systems - Voice systems are now under the auspices of IT. With this come new systems, and the ability to improve on them as well. We have already begun to extend the voice network to areas unknown before using Voice over IP technology. We will continue to deploy this technology, where practical, and extend these capabilities to areas unknown as of yet.
- H. Video Systems - Like Voice systems, Video systems are now under the guidance of IT. We have already begun to dive into the Streaming Media arena, and will look to extend this program to live audiences. With the continued deployment of broadband services to more and more homes, the delivery of video content will only increase. Residents, visitors, and businesses alike will not only ask for the delivery of content such as this, but will expect it.

## **II. Current Information Technology Environment:**

Information Technology is currently a division of the Finance Department, and is made up of two people. However, as of July 1 2005, we are now budgeted for an additional person. IT installs, maintains and supports all hardware, software, networks, voice and video systems for the City of Williamsburg. Our current environment is as follows:

- A. Hardware - There are currently 19 servers running various applications and operating systems in the City of Williamsburg. These servers are located at various locations throughout the City, with most being located at the main data center located in the Municipal Building. All servers in the primary data center in the Municipal Building are connected to an Uninterruptible Power Supply, which provides clean power for the entire room.
- B. Server Software - There is a wide array of software being used throughout the City of Williamsburg. Our primary Network Operating System is Novell Netware 6.5. This software is used for all file/print services throughout the

City. We also have servers running Windows 2000/2003 for various applications. Primary DNS runs on Suse Linux. The Mobile switch for the Police Departments CAD RMS system runs on IBM's AIX 4.3.3.

- C. Desktop Operating Systems - The primary desktop operating system is Windows XP Professional. We still have a large installed base of Windows 2000 Professional.
- D. Network Systems - The City has a very expansive network designed to connect everyone to what they need, from wherever they are. Our current environment is switched Ethernet. Connectivity is 100Mb/s to the desktops, and 1 GB/s to some servers. In addition, several City buildings are connected to the network via fiber optic cabling running at 1 GB/s. Smaller sites connect the network via Virtual Private Network.
- E. Technology Standards - The following table lists the established standards for all hardware and software systems in the City of Williamsburg.

<b>Personal Computers:</b>	
<b>Operating System:</b>	Microsoft Windows XP Professional
<b>Productivity/Office Automation:</b>	Microsoft Office 2000 Professional
<b>Email:</b>	Novell GroupWise 6.5
<b>Antivirus:</b>	Symantec Corporate Edition (Currently Version 10)
<b>Desktop Hardware:</b>	Dell Optiplex GX-280 Tower Chassis 2.8GHz Pentium 4 processor 512Mb RAM 30Gb Hard Disk Drive 1.44 Mb Floppy Disk Drive CD/RW Optical drive Optical Mouse 17inch Flat Panel LCD Monitor 10/100/1000 Network Interface Card Microsoft Windows XP Professional 4 Year Warranty (to coincide with PC LC)
<b>Laptops:</b>	Dell Latitude D610 Pentium M 1.8GHz Processor 512Mb RAM 30Gb Hard Disk Drive Optical Mouse Wireless 802.11 (a/b/g) NIC Integrated 56K Modem CD/RW Optical Drive 4 Year Warranty (to coincide with PC LC)
<b>Servers:</b>	HP DL380 Dual Intel Xeon Processors 1Gb RAM (minimum depending on app) RAID Controller (not embedded) 36Gb/72Gb HDD (Depending on app) Redundant Power Supplies
<b>Database Management:</b>	Microsoft SQL Server 2000
<b>Email System:</b>	Novell GroupWise (Currently Version 6.5)

### **III. Information Technology Initiatives:**

Based on the 8 functional areas of IT, we have developed specific strategies and initiatives to ensure that we meet our goals. These initiatives are, and should be, realistic and obtainable. Above all, these initiatives should deliver value to the City and its citizens in the form of improved service, services, or delivery of these services.

- A. e-Government – The City’s e-Government site has been up and running since the April 2004. Through many types of marketing, including word of mouth, our site usage is definitely increasing. Through added services, citizens, businesses, and visitors alike can conduct the business they need to from wherever they may be. Currently, we offer the ability to pay Utility Bills, Personal Property and Real Estate taxes, Parking Tickets, and Recreation Registration. In addition to financial transactions, we also allow online requests for Public Works services, archived streaming media services, and almost every form available to fill out and request a specific service.

We have much to be proud of in the area of e-Government. Neighboring jurisdictions, much greater in size, do not come close to offering the level of service we do via the Internet. This is due to an organizational culture that promotes new ideas, and enables employees to work toward implementation of these ideas. There are, however, many more areas to improve on in our delivery of these “e-Services.” Foremost in our minds should be implementing services that increase efficiencies, or improve on already established processes.

1. We need to develop a City wide strategy for e-Government. This strategy should detail the goals of the City with respect to these services, and empower employees to deliver these services.
2. We need to add the ability for any resident or business to conduct any financial transaction they would normally walk in, or mail in, to do this via the website. Examples of this are Room and Meal Tax, schedule and pay for building permits/inspections. Special attention must be paid to applications such as Business License and Room and Meal tax, where security and privacy are a concern.
3. We also need to look at areas that are undiscovered in most e-Government implementations. Examples of this include online auctions of surplus equipment, enhanced streaming media services.
4. We will organize an e-Government team, made up of City employees and the Citizens’ Telecommunications Advisory Committee (CTAC), to help in the evaluation of new services, and unforeseen opportunities.

For all of these services to be realized, the impression that the website is an IT function needs to be re-evaluated. Management of these sites is absolutely a function of IT, but the purpose and driving force behind these sites should be business related. Websites have the ability to attract business, promote residency, and tourism, and therefore should be

viewed and treated as a strategic organizational asset.

- B. Geographic Information Systems (GIS) - We are currently in the 2<sup>nd</sup> year of a complete conversion of our existing mapping system to a standard GIS system based on ESRI products. This project began after hurricane Isabel, when it became obvious that a GIS system was more valuable than just providing information about parcels and homes. Even though this project is into its second year, and is ahead of schedule, it is still in its infancy. GIS enables us to graphically display data in ways unimagined. Based on this we should investigate the following:
1. We need to determine, organizationally, where this technology will benefit the City as a whole, and define that strategy.
  2. We have initiated and completed a new hosting agreement with a new company, Timmons Group in Richmond. Our former hosting company was extremely inefficient and unresponsive to our needs. We believe that this agreement with Timmons, a recognized leader in this area, will afford us a much improved site, and access to areas of expertise for enhancements to the site.
  3. We need to determine a triage of layers to be developed and added to the site. In doing this, we ensure we are getting the most "bang for our buck."
  4. While hosting this site and application off-site provides very attractive alternatives, we must and will enable the use of this software for in house purposes. Doing this ensures that during times of emergency, we are not at the mercy of someone else's Internet connectivity.
  5. If there is one area in Technology where grant monies exist in large quantities, GIS is it. The US Department of Homeland Security routinely provides large grant monies for localities to use for GIS development. We should look at extending our usage of these monies, and find new sources for non-emergency development of this application.
  6. We currently have a contract in place for the development and conversion of this data into an enterprise application. While this project will take a lot of time to complete, the follow on years of updates are extremely important to ensure the validity and accuracy of the data. Because of this, and because of the extremely specialized nature of this software, we will eventually have to look at adding staff to focus on this area.
- C. Infrastructure and Security - Of all of the technology assets that we have in the City of Williamsburg, we could easily call our network infrastructure the most important. Without a good, solid and fast infrastructure in place, nothing else could happen. Because of this, we must stay diligent in ensuring that we continually monitor and improve on this vital system.

With the advent of the Internet, security is and must be a primary focus for organizations. Simply stated, if people do not trust that you can safeguard their information, money, or data, they will choose not to conduct their business with your organization. We must ensure that everything we do is

with security in the forefront of our mind. Based on this, we should investigate the following:

1. Upgrade all server and backbone communication devices to 1GB/second. This will ensure the quickest and timeliest response of all applications. Ensure that equipment replacements that should be in the CIP, are in the CIP.
  2. We should investigate the need for a Storage Area Network (SAN). A SAN locates data storage in a single location, treating it as an organizational asset. Since storage space is a key factor to server replacement, a SAN could actually extend server life, and certainly increase backup times and reliability.
  3. The City has a very good wireless network in place. This enables City staff to work without limitations. This also opens up security issues since wireless technology is essentially like the radio in your car. We will investigate strengthening security on this network through the use of advanced encryption and authorization techniques.
  4. We will continue to expand the wireless network to all areas of City offices. We will also investigate strategic partnerships with CWF, WM, and others to provide wireless services to citizens and tourists alike.
  5. Extend the generator that runs the Municipal Building to the air conditioning unit in the server room.
  6. Investigate options to ensure all software systems are patched and up to date automatically. Doing this decreases our exposure to daily security concerns.
- D. Office Automation/Applications - The applications that we use on a daily basis are the workhorses that allow City departments to get their respective jobs done. Working hand in hand with networks and hardware, these applications provide the tools to accomplish our goals and responsibilities. We are, for the most part, up to date with technology in this area. There are, however, many areas that we can improve on. Based on this, we should investigate the following:
1. Where possible, incorporate enterprise licensing agreements as a means of staying up to date as well as reducing costs associated with licensing. We currently have enterprise agreements with Microsoft for their Office Suite and operating systems, Symantec for anti-virus, and HMS for their financial applications.
  2. Establish an IT operating fund in the budget for ensuring the availability of monies for upgrades to critical applications. Examples of these include; Microsoft Office, Symantec Anti-Virus, GWGuardian email filtering and anti-virus scanning, and Websense internet traffic filtering. Included in this as well should be funds to maintain support on critical hardware such as firewalls and routers.

3. Look at establishing a city wide document imaging program using existing Xerox copiers. The ability already exists in these copiers to provide network scanning and archival abilities that are currently not being used.
  4. Look at budget development and Capital Improvement Plan software to aid in these two processes.
  5. Evaluate HMS as a company on a yearly basis, specifically after the retirement of its two managing partners. Develop contingency plans to be implemented in the event that they are no longer a viable company.
- E. Hardware Management - We have implemented a PC Lifecycle Management Program to ensure that we are providing City employees with up to date and effective tools to do their job. The success of this program can be seen in reduced IT Helpdesk requests for problem PCs. There are many areas that we can improve on in this area, including:
1. Develop and maintain a concise and up to date inventory of all IT hardware assets in the City. This will include all PCs, and their associated peripheral Devices City wide.
  2. Develop a printer lifecycle maintenance program to emulate the successes of the PC lifecycle management program. Expand the use of network printers to minimize single use only configurations.
  3. Develop a server replacement and consolidation program to emulate the PC lifecycle management program. Consolidating where appropriate will, over time, reduce the number of servers the City needs, and limit the amount of money required to support and maintain these critical devices.
- F. Internet/Intranet Technologies - The growth of the Internet in recent years has had a definite impact on the City of Williamsburg. We currently have a web presence, both internally and externally, that is to be envied by other localities. Currently, IT maintains 7 different websites, both internally and externally for the City. The services that we provide via these technologies continue to expand, and will for the foreseeable future. Because of the very nature of technology and the Internet, there are many areas that we can improve on. Examples of these are as follows:
1. Implement a content management system for the Internet and Intranet websites. Doing this empowers City staff to improve and update pages that are specific to their departments, and ensures better management of the sites as a whole.
  2. We need to increase our bandwidth to the Internet. Doing this ensures the viability of critical services such as email, VPN connectivity to outside agencies and allows us to deliver rich web technologies such as streaming media.
  3. In addition to increasing bandwidth, we need to provide for redundancy in the event of circuit failure.
  4. Form an internal committee to redesign the Intranet to make it more user

friendly, and change its appearance to look more like the main City website.

G. Voice Systems - The City of Williamsburg currently has a very sophisticated telephone and voice mail system. With the impending move of these system responsibilities to IT, there are many new areas to improve on and exploit. We will investigate the following:

1. We currently have two sites using Voice over IP technology. This blurs the line between data and voice networks, eliminating cable installs and circuit charges. This is, however, fairly new technology. We will investigate expanding our use of this technology to areas that are appropriate for its use.
2. With the move of voice responsibilities to IT, we need to inventory and maintain a list of all circuits, phone numbers, and peripheral devices that the City pays for on a monthly basis. Eliminating where they are not being used and consolidating where appropriate will reduce cost and improve performance.
3. Determine the viability of implementing a unified messaging system. This would place all voice mail, fax, and email in a common location, your email client. Incorporating messaging into a single place will save money, as well as employee time and training.
4. In reviewing the cable franchise agreement that the City has with Cox Communications, we discovered a provision requiring Cox to install fiber optic cable between the Municipal Complex and Quarterpath Recreation Center. We will follow up to ensure that this is completed to the satisfaction of the City. This will eliminate duplicate phone systems, circuits and data.
5. Implement a fax server system whereby employees can send and receive faxes from their email clients. This system would leverage the established phone system, reducing circuit charges for fax lines and significantly reduce fax machine maintenance and paper costs.

H. Video Systems - With the inclusion of video systems under IT, a whole new area of technology affords us opportunities that were previously unknown. We currently operate and maintain a City wide cable channel that is used to disseminate valuable information 24 hours a day. There are many areas where we can improve on and many areas where we can expand our use of video to improve communication and services provided to the public. Areas to investigate are as follows:

1. Develop a City wide strategy for video systems. We should determine our direction in this regard, and pursue it based on written policy.
2. Expand the use of streaming media services. We currently archive and allow for on demand playback of City Council meetings, City Council work sessions, and Planning Commission meetings. We need to look at allowing the broadcast of these meetings live via our website.



3. Investigate opportunities to sell ad space to local businesses and organizations, via Channel 48. This would require written policy to address what is acceptable and what is not acceptable prior to implementation.
4. Provide the ability for citizens to request advertising for such things as neighborhood meetings, special events, etc. via channel 48. This would require written policy to address what is acceptable and what is not acceptable prior to implementation.

#### **IV. Departmental IT Initiatives:**

In the previous section we have established and outlined goals for the City of Williamsburg in respect to IT projects and initiatives. In this section, we will identify IT initiatives that are specific to each department. In establishing these projects and initiatives, we met with each department to determine and ascertain their ideas and goals relative to technology within their individual department. These projects are designed to improve or develop on processes or procedures within these departments. They are not, and should not be viewed, as City wide implementations. However, in many cases, improving work flow and business processes within one department using technology, will invariably spill over into another department.

##### **A. Finance:**

1. Investigate using HMS Budgetary Accounting system for budget preparation to improve the budget preparation process.
2. Investigate a Capital Improvement Plan budgeting and tracking software system.
3. Determine ability to consolidate separate credit card contracts into a single contract from one vendor, and add the ability to accept debit cards.
4. Investigate the feasibility of remote reading water meters via wireless technology.
5. Add cashiering workstations to remote locations, (library, and rec).
6. Work with HMS to convert and implement all finance applications to .Net based applications.

##### **B. Williamsburg Fire Department:**

1. Investigate the ability to perform mobile/wireless EMS patient reporting via web based Firehouse software.
2. Investigate the ability to perform mobile/wireless fire inspections via web based Firehouse software.
3. Utilize 800MHz radio system to install Mobile Data Terminals in all fire vehicles. Automate recording of events such as responding, arriving, in service, etc. Also integrate GIS to show incident location, hydrant locations, pre-plan information, etc.

4. Investigate upgrades to mobile command post to support VoIP technology, wireless network for laptops, remote printing, etc.
5. Upgrade displays in EOC to large screens to show status via software, video teleconferencing, cable TV, etc. Also link EOC to HRPDC microwave network.

C. Parks and Recreation:

1. Connect Quarterpath voice and data systems to Municipal Building via Cox installed fiber optic cabling.
2. Investigate purchase of digital projector and laptop to be kept at Quarterpath.
3. Install cashiering stations at Quarterpath that integrate back into Finance systems directly.
4. Investigate need for a weather station at Waller Mill Park.
5. Extend current online registration system to all services offered from the parks and Recreation Department.

D. Public Works and Utilities:

1. Investigate ways to better track garbage and recycling collection. Should be incorporated into new Work Order Management system.
2. Consult with key Public Works personnel to best determine GIS needs and capabilities. An area of focus should be water/sewer distribution. Investigate resource mapping using GPS technology.
3. As we implement a City wide faxing solution, add key Public Works personnel to this to reduce redundancy and increase efficiency. An example is to add the ability to receive Miss Utility tickets directly into email, instead of manually via fax machine.

E. Williamsburg Police Department:

1. Investigate requirements and feasibility of using Mobile Data Terminals (MDT) in all police vehicles. Re-work to ensure inter-operability with existing New World Systems implementation should be evaluated prior to commencement.
2. Place all PSAP PCs on 3 year replacement cycle to ensure most up to date equipment is in place.
3. Look at possibility of relocating WPD IT equipment to Municipal Building Server Room. Consolidate equipment where practical.

F. Planning Department:

1. Investigate the need for an Integrated Voice Response System (IVR) to be used for status updates and requests for various permits in the Code Compliance division.

2. Investigate getting an electronic copy of the Building Code that could be integrated with the Code Compliance software. This would allow inspectors to reference specific aspects of the Building Code and have it tie in directly to their reports and permit notes.
3. Investigate the ability to allow for a more streamlined and easy to use piece of software to aid in the creation of agendas.
4. Install Permit Kiosk in areas around front counter to allow permit requests to be filled out electronically by the individual or company requesting them.

G. Commissioner of the Revenue:

1. Investigate ways to improve vehicle assessment process with NADA
2. Recreate forms to allow for automatic population of contact and vehicle information.
3. Investigate allowing businesses to login to a website and view information specific to their business.

H. City Manager:

1. Investigate ways to improve services to businesses. Provide services as a means to attract new business as well as help established businesses grow.
2. Investigate the need for an automated time and attendance system to better aid in tracking employee time.
3. Allow for Benefit Enrollment to be accomplished using the City Intranet.
4. Establish an online employment application system. System should allow for storing applications in a database and allow for detailed skill set searches.
5. Investigate ways to track small consumable purchases.
6. Investigate uses for streaming media services, specifically training.
7. Continue with Voice Recognition initiatives for Clerk of Council. If appropriate, expand use to others who may benefit.